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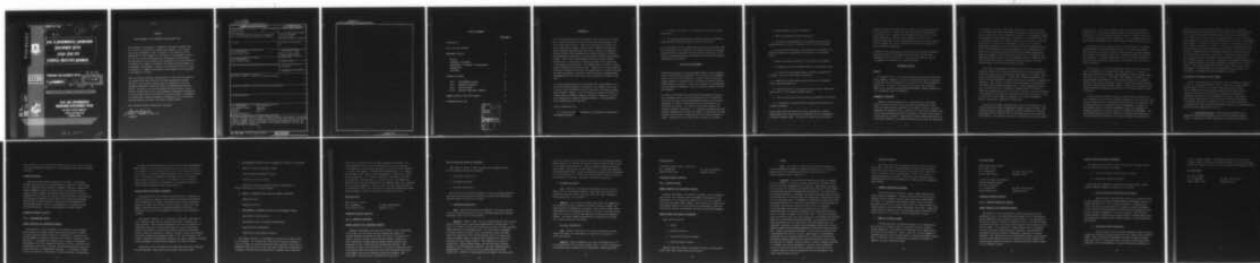
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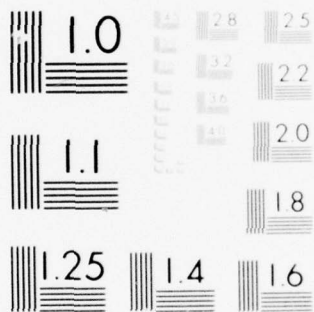
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CEEDO

PROGRAMS AND RESOURCES OFFICE

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15 NOVEMBER 1977

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**CIVIL AND ENVIRONMENTAL
ENGINEERING DEVELOPMENT OFFICE**

(AIR FORCE SYSTEMS COMMAND)

**TYNDALL AIR FORCE BASE
FLORIDA 32403**



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Other facilities such as Weapon and Pavement Test Section sites; Corrosion and Soils and Pavements Laboratories; and computation facility are available on Tyndall.

TECHNOLOGY PROGRAMS

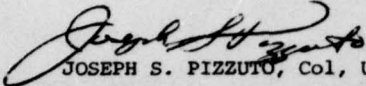
CEEDO technology programs encompass four fields: Environmental Quality, dealing with all areas and activities affecting or affected by air base development and operations; Aerospace Structures, dealing with threat assessment, protective construction, and air mobile shelter systems; Mission Support, dealing with energy conservation, facility, equipment and fire protection systems, corrosion detection and correction, and the Warm Fog Dispersal System; and Aircraft Operational Surfaces, dealing with structural analysis, surface effects and management of aircraft operational surfaces, and development of contingency launch and recovery systems. Detailed descriptions of the TPOs follow.

TECHNOLOGY PLANNING OBJECTIVE

The furnishing of this document by the Government is not to be construed to obligate your company to furnish to the United States Government any experimental, developmental, research, or production articles, services, or proposals, or comment with respect to such document, the TOD program or any aspects of either.

When US Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This document has been reviewed and is approved.


JOSEPH S. PIZZUTO, Col, USAF, BSC
Commander

Without a long-range view and an associated integrated environmental RDT&E program, the military services will be forced into a long series of reactions to crisis situations which could stop or detract from their basic mission of national defense and result in inefficiency of performance. In order that environmental considerations can be evaluated realistically and promptly so as not to impede the overall decision making process, research and development in environmental quality is critical and requirements cannot be met without it.

SPECIFIC GOALS AND TECHNICAL APPROACHES:

The principal goal is to provide technology that will overcome the effects of physical, chemical, and biological pollutants that adversely affect human health or welfare, unfavorably alter ecological balances important to human life, adversely affect animal or plant life, cause damage to and deterioration of man-made materials or property, or degrade the utility of the environment for aesthetic and recreational purposes.

Det 1 HQ ADTC/PRX Tyndall AFB FL 32403		13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Civil Engineering Fire Protection Environmental Quality Pavements Corrosion Structures Shelters Soils Energy Conservation		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This TOD describes the four Technical Planning Objectives developed to guide the conduct of research and development in passive defense techniques for the theater airbase, pavement studies, environmental pollution abatement and control, air mobility concepts, energy conservation, fire fighting equipment, air base support, and warm fog dispersal.		

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

A. ENVIRONMENTAL MONITORING AND ENVIRONMENTAL CHEMISTRY OF POLLUTANTS

Ambient Pollutant Measurement Systems

Source Emission Measurement Systems

Ecological Indicator Systems

Chemical and Physical Pollutant Transport Mechanisms for
Chemical, Biological, and Physical Agents

B. RESOURCE CONSERVATION AND POLLUTION CONTROL TECHNOLOGY

Compliance Driven

Conservation Driven

C. ENVIRONMENTAL ASSESSMENT TECHNOLOGY AND MANAGEMENT SYSTEMS

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restricted or impacted because of lack of commercial solutions. (2) Develop data pertinent to Air Force operations to serve as the basis for standards or criteria where none exist, or modify existing standards or criteria that appear to be based upon inadequate data. (3) Develop R&D programs to make present pollution abatement technology more timely and cost-effective. (4) Engage in R&D efforts necessary to evaluate and extend the technology base in a specific pollution-abatement area where Air Force has unique expertise or has equipment that is not available in the civilian community. Criteria 1 and 2 are most important, and in all cases the Air Force will participate in joint R&D efforts with organizations engaged in mutually beneficial environmental projects.

TPO FOCAL POINT

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SPECIFIC GOALS AND TECHNICAL APPROACHES:

Major areas of thrust in which research and development efforts will be conducted include the following:

- A. Protective Construction
- B. Air Mobility Systems
- C. Air Base Vulnerability

Specific goals and avenues of approach to achieve upgraded capability consistent with current/projected threats and operational needs within the major areas of thrust are as follows:

- A. Protective Construction.

Goal: Improve configuration and hardness of air base facilities

and technological opportunities, and the needs of present and projected systems. These plans include proposed efforts to achieve desired capabilities, to resolve known technical problems, and to capitalize on new technical opportunities. The proposed efforts undergo a lengthy program formulation and review process. Generally, the criteria applied during the formulation and review are responsiveness to stated objectives and known requirements, scientific content and merit, program balance, developmental and life cycle costs, and consideration of payoff versus risk.

It is fully recognized that the development and accomplishment of the Air Force technical program is a project of the teamwork on the part of the Air Force laboratories and the industrial and academic research and development community. The TOD program is designed to provide to industry and the academic community, necessary information on the Air Force laboratories' planned technology programs. Each laboratory's TOD is extracted from its R&T Plan.

Specific objectives are:

- a. To provide planning information for independent research and development programs.

protective construction modifications developed and tested during FY78-82. Upgrade analysis for aircraft shelters will commence again in FY80 through 82 to defeat selected munitions. Passive defense techniques to conceal, decoy, harden, and obscure air base targets will be studied and developed during FY78 through FY80. Foreign technology assessments will be performed on a continuing basis to identify cost and performance effective materials and construction techniques applicable to Air Force facilities.

B. Air Mobility Systems.

Goal: Develop new technology and materials for use in, and in support of, air-transportable systems. The primary objectives are to standardize shelters, reduce life cycle costs, and improve transportability and utility of the shelters.

Approach: In the future (probably after FY78) this program will be directed by the Joint Committee on Tactical Shelters (JOCOTAS) and funded through the Department of the Army. USAF tactical shelter RDT&E requirements will be forwarded by CEEDO for inclusion in the DOD program

HOW TO USE THIS DOCUMENT

Unsolicited proposals to conduct programs leading to the attainment of any of the objectives presented in this document may be submitted directly to an Air Force laboratory. However, before submitting a formal proposal, we encourage you to discuss your approach with the laboratory point of contact. After your discussion or correspondence with the laboratory personnel, you will be better prepared to write your proposal.

As stated in the "AFSC Guide for Unsolicited Proposals" (copies of this informative guide on unsolicited proposals are available by writing to Air Force Systems Command/PPPR, Andrews Air Force Base, Washington, DC 20334), elaborate brochures or presentations are definitely not desired. The "ABCs" of successful proposals are accuracy, brevity, and clarity. It is extremely important that your letter be prepared to encourage its reading, to facilitate its understanding, and to impart an appreciation of the ideas you desire to convey. Specifically, your letter should include the following:

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TECHNOLOGY PLANNING OBJECTIVE

TPO 3: MISSION SUPPORT

GENERAL OBJECTIVE AND INVESTMENT STRATEGY:

Research, development, and resource investment in this technology area provides the technology base and hardware development for the enhancement of civil engineering support of Air Force real property facilities and combat weapon systems. The ultimate goal is more effective mission support at reduced operation and maintenance costs consistent with national environmental and energy conservation programs.

results.

5. Name and research experience of the principal investigator.
6. A suggestion as to the proposed starting and completion dates.
7. An outline of the proposed budget, including information on equipment, facility, and personnel requirements.
8. Names of any other Federal agencies receiving the proposal (this is extremely important).
9. Brief description of your facilities, particularly those which would be used in your proposed research effort.
10. Brief outline of your previous work and experience in the field.
11. If available, you should include a description brochure and a financial statement.

As you read through the pages that follow, you may see a field of endeavor where your organization can contribute to the achievement of a specific technical goal. If such is the case, you are invited to

A. ENERGY

Goal: Significantly reduce the total Air Force facility energy consumption and augment or substitute alternate or more efficient energy sources for petroleum-derived fuels, while maintaining or improving Mission Support capabilities.

Approach: Concentrated and coordinated efforts are underway and will continue in the areas of energy conservation, alternate energy sources, and energy management/control systems. Conservation techniques will continue to be identified and studied during FY78 and 79 with testing of new methods during FY78 through FY80 for retrofit or new construction of Air Force facilities. Government and industry developed energy conservation measures will be monitored and, where applicable, adapted for Air Force use on a continuing basis. Development of prototype solar and wind energy supplemental systems for reducing the requirement for diesel generation of prime power and heating at remote Air Force sites will continue. In FY79 alternate energy studies will continue for the purpose of

sponsorship, the US Army Waterways Experiment Station and Construction Engineering and Research Laboratory are conducting R&D in corrosion management systems and energy conservation/reuse for Air Force facilities.

d. Aircraft Operational Surfaces: Research and development in this area is a primary function of CEEDO and is conducted through contracts with the Army, Navy, and the private sector. Contingency launch and recovery surface research is a prime effort in this program and has been closely coordinated with our foreign allies in NATO.

ORGANIZATION

CEEDO is organized to reflect the major mission areas of civil engineering and environmental quality RDT&E.

FACILITIES

CEEDO currently fully occupies two, and partially occupies three, buildings centrally located on Tyndall AFB, Florida. The only technical facility is the Environics Laboratory. This facility is fully staffed and equipped and is used to conduct bench level and pilot-plant evaluations of methods to reduce and control pollution from Air Force unique activities, plus determinations of the fate and effects of Air Force-unique pollutants.

SUMMARY

TECHNOLOGY PLANNING OBJECTIVES AND PROJECT LISTING

The CEEDO technology areas and technology planning objectives are synonymous.

<u>PROGRAM ELEMENT</u>	<u>PROJECT</u>	<u>TITLE</u>	<u>TPO</u>
62601F	1900	Environmental Quality Technology	1
63723F	2101	Aerospace Structures	2
	2102	Mission Support	3
	2103	Environmental Quality	1

DET 1 [CEEDO] HQ ADTC
OCTOBER 1977

COMMANDER COL PIZZUTO CC 5297	EXECUTIVE CMSGT LAUGHTER ECE 5287
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ADMINISTRATION TSGT KIMBERLING DA 4295
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DIRECTORATE OF ENVIRONICS MAJ CROWLEY EC 2097	ENVIRONMENTAL ASSESSMENT RESEARCH DIVISION MAJ DALEY ECA 4234	ENVIRONMENTAL SCIENCES DIVISION MAJ MacMARTIN ECG 4297	ENVIRONMENTAL ENGINEERING AND ENERGY RESEARCH DIVISION MAJ FREIN ECW 2097
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 COMMERCIAL 904 283 XXXX
 TELECOPIER AUTOVON 970 2554
 COMMERCIAL 904 283 2554

OPPORTUNITIES

This section identifies several areas of technology, related to the CEEDO R&D efforts, which appear especially appropriate for the Independent Research and Development (IR&D) Program. The respective TPO focal points can provide additional information.

TPO-1 ENVIRONMENTAL QUALITY

Advanced Environmental Monitoring Techniques

TPO-2 AEROSPACE STRUCTURES

Improved Panel Connection Techniques For Tactical Shelters
 Develop Methods For Protecting Tactical Shelters From The
 Effects of Electromagnetic Pulse

TPO-3 MISSION SUPPORT